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मानक

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“पुराने को छोड़ नये के तरफ”

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“Step Out From the Old to the New”

IS 10836-1 (1984): Pliers, Loop Bending, Dental, Tweed's Pattern, Part 1: Fixed Beak, Type 1 [MHD 8: Dentistry]



“ज्ञान से एक नये भारत का निर्माण”

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“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”



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# Indian Standard

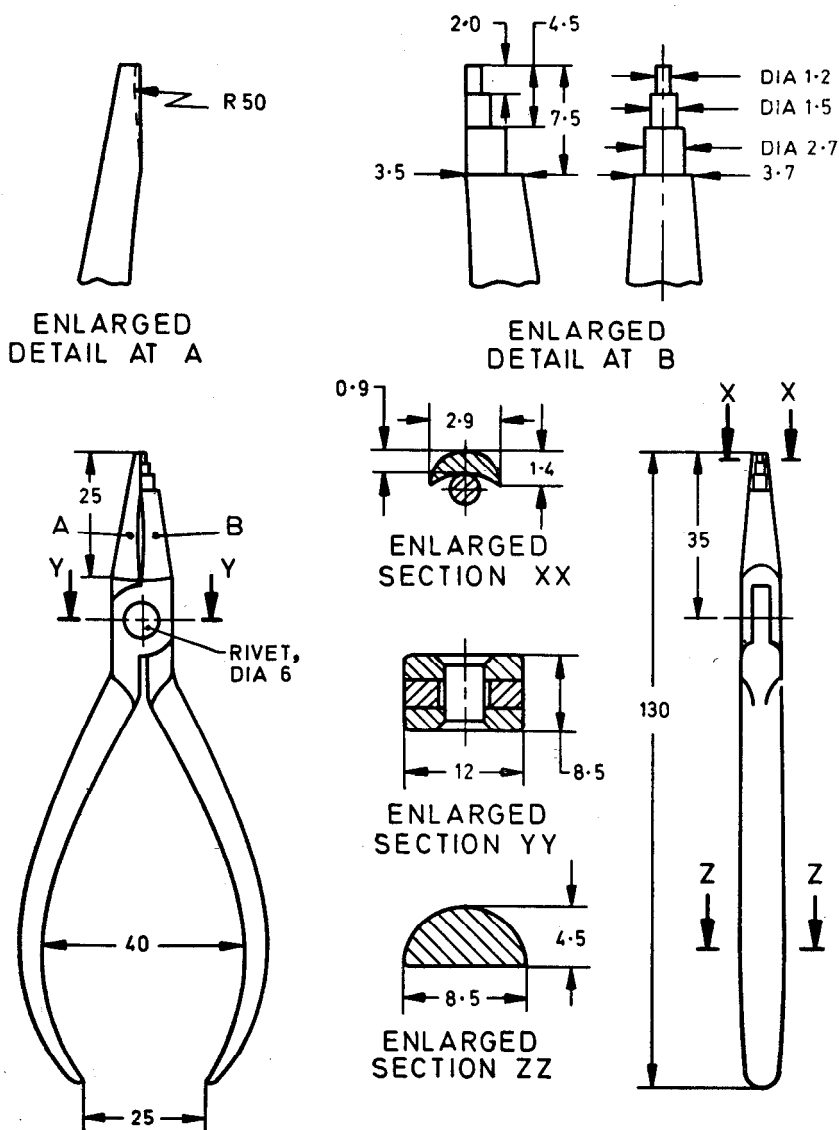
## SPECIFICATION FOR PLIERS, LOOP BENDING, DENTAL, TWEED'S PATTERN

### PART 1 FIXED BEAK, TYPE 1

**1. Scope** — Specifies material, dimensions and other requirements for Tweed's loop bending pliers used in dentistry.

**2. Material** — Stainless steel conforming to designation 30Cr13 of IS : 6603-1972 'Specification for stainless steel bars and flats'. The steel used for the rivet shall be the same as that for the pliers.

**3. Shape and Dimensions** — As shown in Fig. 1.



All dimensions in millimetres.

FIG. 1 PLIERS, LOOP BENDING, DENTAL, TWEED'S PATTERN  
(FIXED BEAK, TYPE 1)

**3.1 Tolerances on various dimensions shall be permitted as follows:**

- a)  $\pm 0.1$  mm for dimensions up to 5.0 mm,
- b)  $\pm 0.2$  mm for dimensions above 5.0 mm and up to 10.0 mm,
- c)  $\pm 0.5$  mm for dimensions above 10.0 mm and up to 20.0 mm,
- d)  $\pm 1.0$  mm for dimensions above 20.0 mm and up to 50.0 mm, and
- e)  $\pm 1.5$  mm for dimensions above 50.0 mm.

**4. Workmanship and Finish**

**4.1** The two halves of the pliers shall move freely at the joint without any play. The movement shall be even and the jaws shall register accurately.

**4.2** All the surfaces of the pliers shall be finished smooth and bright except the outer surface of the handle which may be matt finished.

**4.3** The pliers shall be free from sharp and rough edges, pits, burrs, cracks and other surface defects.

**4.4** The joint shall be box type conforming to 6 of IS : 3642-1978 'General requirements for surgical instruments ( *first revision* )'. The ends of the rivet in the joint shall be finished flush with the surface.

**4.5** One of the jaws of the pliers shall have stepped beak as shown in Fig. 1.

**4.6** The pliers shall be passivated by treating in 10 percent ( v/v ) nitric acid solution for not less than 30 minutes at a temperature of not less than 10°C and not exceeding 60°C. The pliers shall then be rinsed in water, dried in hot air and the joint lightly lubricated with a non-toxic and non-corrosive substance.

**5. Heat Treatment** — The pliers shall be uniformly hardened and tempered to a hardness of 450 to 500 HV, when tested in accordance with IS : 1501-1968 'Method for Vickers hardness test for steel ( *first revision* )'.

**6. Tests**

**6.1 Practical Test** — The pliers shall be used to make a complete loop of orthodontic stainless steel wire ( hard drawn ) of 0.5 mm diameter on the second step from the free end of the pliers. This shall be done six times. On completion of the test, the pliers shall not show any sign of damage or acquire a permanent set.

**6.2 Elasticity Test** — The pliers shall be made to grip a piece of 1 mm thick hardened steel bit. The bit chosen shall be such as not to be damaged by the test. A compressive force of 20 kgf shall be applied to the pliers and allowed to act for 5 minutes in such a manner that the force acts on each arm of the handle ( a total of 40 kgf on the instrument ) at a distance of 40 mm from its free end. On completion of the test, the pliers shall not show any sign of damage or acquire a permanent set.

**6.3 Corrosion Resistance Test** — The pliers shall be tested in accordance with IS : 7531-1975 'Method for boiling and autoclaving test for corrosion resistance of stainless steel surgical instruments'. It shall not show any sign of corrosion after the test.

**7. Marking** — Each pliers shall be legibly and indelibly marked with the name of the pliers; the manufacturer's name, initials or registered trade-mark; the words 'Stainless Steel' and the country of manufacture.

**7.1 ISI Certification Marking** — Details available with the Indian Standards Institution.

**8. Packing** — Each pliers shall be wrapped either in a polyethylene bag or a wax paper. The instrument shall then be packed in cartons in accordance with the current trade practice. The carton shall bear the name of the pliers, manufacturer's name or registered trade-mark and the country of manufacture.

**8.1** The pliers may also be packed as agreed to between the purchaser and the supplier.